

CLAIMS

1. A complex shape sheet glass forming method, including:

5 a step of heating a horizontal sheet glass to near its softening temperature;

a step of bending the sheet glass in a conveying direction by pinching while conveying the heated sheet glass with a plurality of straight rollers disposed above and below it; and

10 a step of bending the sheet glass in a direction perpendicular to the conveying direction by pinching while conveying the sheet glass bent in the conveying direction with a convex forming roller with its center bulging in a curve and a concave forming roller with its center waisted in a curve, to obtain a complex shape glass.

15 2. A complex shape sheet glass forming method according to claim 1, wherein the convex forming roller comprises multiple segment rollers arrayed on a straight shaft and the concave forming roller comprises multiple segment rollers arrayed on a straight shaft.

20 3. A complex shape sheet glass forming method according to claim 2, wherein some or all of the multiple segment rollers are freely rotatable with respect to the respective straight shaft.

25 4. A complex shape sheet glass forming method according to claim 1, wherein the respective curvatures of the complex shape glass in the conveying direction and the direction perpendicular to the conveying direction are of circular arc form and the radius of curvature in the conveying direction is smaller than the

radius of curvature in the direction perpendicular to the conveying direction.

5. A complex shape sheet glass forming method according to claim 1, further including a step of quenching the complex shape glass while maintaining the curved shape of the complex shape glass by pinching while conveying it further with upper and lower curved rollers.

6. A complex shape sheet glass forming apparatus for heating a horizontal sheet glass to near its softening temperature and then complexly bending this sheet glass with rollers in a conveying direction of the sheet glass and a direction perpendicular to the conveying direction, comprising:

a first forming part having multiple upper and lower straight rollers disposed above and below the heated sheet glass for bending the sheet glass in the conveying direction by pinching while conveying the sheet glass; and

a second forming part having a convex forming roller with its center bulging in a curve and a concave forming roller with its center waisted in a curve for forming a complex shape glass by bending the sheet glass bent in the conveying direction by these upper and lower straight rollers in the direction perpendicular to the conveying direction by pinching while conveying the sheet glass.

7. A complex shape sheet glass forming apparatus according to claim 6, wherein the convex forming roller comprises multiple segment rollers arrayed on a straight shaft and the concave forming roller comprises multiple segment rollers arrayed on a straight shaft.

8. A complex shape sheet glass forming method according to claim 7, wherein

some or all of the multiple segment rollers are freely rotatable with respect to the respective straight shaft.

9. A complex shape sheet glass forming apparatus according to claim 6, so
5 constructed that the respective curvatures of the complex shape glass in the conveying direction and the direction perpendicular to the conveying direction are formed in a circular arc shape and so constructed that the radius of curvature of the complex shape glass in the conveying direction is smaller than the radius of curvature in the direction perpendicular to the conveying direction.

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10. A complex shape sheet glass forming method according to claim 6, further comprising a tempering part for quenching the complex shape glass formed with the convex forming roller and the concave forming roller while maintaining the shape of the complex shape glass by pinching while conveying it with curved
15 rollers.